WHAT IS CLAIMED IS:

1. A heat transport device comprising:

an evaporator which has a structure for generating a capillary force to circulate working fluid, and in which liquid-phase working fluid evaporates;

a condenser in which vapor-phase working fluid condenses;

a plurality of liquid channels which connect the evaporator and the condenser, and through which the liquid-phase working fluid flows; and

at least one vapor channel through which the vapor-phase working fluid flows.

2. A heat transport device according to claim 1, wherein the plurality of liquid channels, the vapor channel, the evaporator, and the condenser are provided in the same substrate.

3. A heat transport device according to claim 1, wherein an insulating section is provided along the liquid channels and the vapor channel to suppress heat transmission between the liquid and vapor channels and the outside, or between the liquid channels and the vapor channel.

4. A heat transport device according to claim 2, wherein an insulating section is provided along the liquid channels and the vapor channel to suppress heat transmission between the liquid and vapor channels and the outside, or between the liquid channels and the vapor channel.

5. A heat transport device according to claim 2, wherein the substrate has a three-layer structure composed of first, second, and third substrates, and the liquid channels and the vapor channel are provided between the second substrate serving as a center layer and the first substrate adjacent to the second substrate.

6. A heat transport device according to claim 4, wherein the substrate has a three-layer structure composed of first, second, and third substrates, and the liquid channels and the vapor channel are provided between the second substrate serving as a center layer and the first substrate adjoining the second substrate.

7. A heat transport device according to claim 4, wherein the insulating section is a cavity defined by a through hole provided in the second substrate, and the first and third substrates that close the through hole.

8. A heat transport device according to claim 7, wherein the interior of the cavity is placed in a reduced-pressure state.

9. A heat transport device according to claim 7, wherein the interior of the cavity is filled with a gas having a thermal conductivity lower than the thermal conductivities of the materials of the first to third substrates.

10. A heat transport device according to claim 1, wherein the cross-sectional areas of the liquid channels are larger on the side of the condenser than on the side of the evaporator.

11. A heat transport device comprising:

an evaporator which has a structure for generating a capillary force to circulate working fluid, and in which liquid-phase working fluid evaporates;

a condenser in which vapor-phase working fluid condenses;

a liquid channel through which the liquid-phase working fluid flows; and

a vapor channel through which the vapor-phase working fluid,

wherein the cross-sectional area of the liquid channel at right angles to the longitudinal direction gradually decreases from the condenser toward the evaporator.

12. A heat transport device according to claim 11, wherein the liquid channel, the vapor channel, the evaporator, and the condenser are provided in the same substrate.

13. A heat transport device according to claim 11, wherein an insulating section is provided along the liquid channel and the vapor channel to suppress heat transmission between the liquid and vapor channels and the outside, or between the liquid channel and the vapor channel.

14. A heat transport device according to claim 12, wherein an insulating section is provided along the liquid channel and the vapor channel to suppress heat transmission between the liquid and vapor channels and the outside, or between the liquid channel and the vapor channel.

15. A heat transport device according to claim 12, wherein the substrate has a three-layer structure composed of first, second, and third substrates, and the liquid channel and the vapor channel are provided between the

second substrate serving as a center layer and the first substrate adjacent to the second substrate.

16. A heat transport device according to claim 14, wherein the substrate has a three-layer structure composed of first, second, and third substrates, and the liquid channel and the vapor channel are provided between the second substrate serving as a center layer and the first substrate adjacent to the second substrate.

17. A heat transport device according to claim 16, wherein the insulating section is a cavity defined by a through hole provided in the second substrate, and the first and third substrates that close the through hole.

18. A heat transport device according to claim 17, wherein the interior of the cavity is placed in a reduced-pressure state.

19. A heat transport device according to claim 17, wherein the interior of the cavity is filled with a gas having a thermal conductivity lower than the thermal conductivities of the materials of the first to third substrates.

20. An electronic device having a heat transport mechanism, wherein the heat transport mechanism comprises:

an evaporator which has a structure for generating a capillary force to circulate working fluid, to which a heating section is thermally connected, and in which liquid-phase working fluid evaporates;

a condenser in which vapor-phase working fluid condenses;

a plurality of liquid channels through which the liquid-phase working fluid flows, and which connect the evaporator and the condenser; and

a vapor channel through which the vapor-phase working fluid flows.

21. An electronic device having a heat transport mechanism, wherein the heat transport mechanism comprises:

an evaporator which generates a capillary force to circulate working fluid, to which a heating section is thermally connected, and in which liquid-phase working fluid evaporates;

a condenser in which vapor-phase working fluid condenses;

a liquid channel through which the liquid-phase working fluid flows; and

a vapor channel through which the vapor-phase working

fluid flows,

wherein the cross-sectional of the liquid channel at right angles to the longitudinal direction gradually decreases from the condenser toward the evaporator.